CBRN PAPR Standard Development

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CBRN PAPR Standard Development

- Existing NIOSH or Military Standards are not completely applicable to meet a terrorism agent threat
- Inherent Differences between NIOSH & Military Standards
  - **Purpose**
  - **Target User Groups**
  - **Hazards**
  - **Operation**
  - **Protection**

CBRN PAPR Standard Development

Goal:

Develop a NIOSH/NPPTL powered air purifying respirator standard that addresses CBRN materials identified as inhalation hazards and/or possible terrorist hazards for emergency responders.

CBRN PAPR Standard Development

A. Warm Use: Concentrations above acceptable exposure limits, but less than IDLH concentrations; sustained support operations; long term use for decon, traffic control, rehabilitation, rescue and recovery; hazard known, quantified & controlled.

B. Crisis Provision: Egress and escape from above IDLH concentrations, high physiological (flow) demand possible. Contingency for unforeseen factors such as secondary device or pockets of entrapped hazard.

CBRN PAPR Standard Development

A. Hazard Analysis
B. Protection
C. Human Factors / Environmental Factors
D. Standards Concept Definition
E. Test Requirements
F. Testing / Validation
G. Quality Assurance Requirements
H. Public Process

CBRN PAPR Standard Development

- Conceptual Requirements:
  - Tight fitting, full facepiece PAPR (includes neck dam PAPR)
  - Use canister requirements defined in the CBRN APR statement of standard
  - minimum number of mechanical connectors (2)
  - minimum flow rate of 115 Lpm

CBRN PAPR Standard Development

- Provision for Interchangeable Use of Consumable Canisters
- Uses requirements established for the CBRN APR Canister

  ***Mechanical Connector and Filter Design**

  ***Mechanical Connector Gasket**

  ***Dimensions and Weight**

  ***Same canister testing as CBRN APR**

CBRN PAPR Standard Development

- Hazard List Derived During earlier CBRN standards development work
- Category Grouping Addresses 139 Respiratory Hazards
- Eleven (11) test representatives identified for certification testing

CBRN PAPR Standard Development

- 42 CFR, Part 84 – Applicable Sections
- Requirements Derived from other Standards/Specifications
- Special CBRN PAPR Requirements

CBRN PAPR Standard Development

Component Requirements:

--Tight Fitting Full Facepiece
--Harness Requirements
--Container Requirements
--Labeling

CBRN PAPR Standard Development

Construction Requirements

--Battery Requirements

--Flow Indicators

--Operational Controls

--Noise Levels

--Airflow (minimum of 115 Lpm, two mechanical connectors)

CBRN PAPR Standard Development

- Special CBRN Requirements
  -- Gas Life Testing
  -- CWA Penetration/Permeation
  -- LRPL

CBRN PAPR Standard Development

- Being Conducted in Public Forum
- Meetings With
  - Stakeholders
  - Manufacturers
- Use of Website for Concept Papers
  - http://www.cdc.gov/niosh/npptl

CBRN PAPR Standard Development

Development Schedule:

1. Next Public Meeting	January 27, 2004
2. Peer Reviews	March 5, 2004
3. Standard	**March 30, 2004**

CBRN PAPR Standard Development

- **Vulnerability Assessment Factors Involve:**
  - **Toxicology**
  - **Delivery Methods**
  - **Challenge Concentration**
  - **Protectability**
- **Terrorist's Intent Not Prescribed**
- **Toxicities of TIC and CWA Span Orders of Magnitude in Values**
- **Challenge Levels are Venue Specific**
- **Test Standards Dependent on Respirator Uses**